What is claimed is:

1. A measuring apparatus comprising:

a measuring unit having a transparent dielectric block, a metal film formed on one of the surfaces of said dielectric block, and a transparent dielectric film formed on said metal film;

a light beam entering means for entering a light beam into said dielectric block at various incident angles within an angle range that satisfies the conditions of total reflection at the interface between said dielectric block and said metal film, and creates two or more dark lines due to attenuated total reflections in a light beam totally reflected at said interface;

a light detecting means for receiving said light beam totally reflected at said interface, and detecting positions on a light receiving surface of said two or more dark lines contained therein; and

a calculation means for calculating a variation in each of said positions of said two or more dark lines on said light receiving surface arising from a change in the dielectric constant of a substance placed on said transparent dielectric film with reference to one of said two or more dark lines having the least positional variation on said light receiving surface among said two or more dark lines, based on the output of said light detecting means.

2. A measuring apparatus according to claim 1, wherein said dark line having the least positional variation is a dark

line created by a light component of said light beam having the largest incident angle at said interface among said two or more dark lines.

3. A measuring apparatus according to claim 1, wherein said measuring unit further comprises a sensing material fixed on said dielectric film, and said change in the dielectric constant is a change in said dielectric constant arising from a reaction when a test substance containing a material that reacts to said sensing material is brought into contact with said sensing material.

4. A measuring apparatus according to claim 2, wherein said measuring unit further comprises a sensing material fixed on said dielectric film, and said change in the dielectric constant is a change in said dielectric constant arising from a reaction when a test substance containing a material that reacts to said sensing material is brought into contact with said sensing material.

5. A measuring apparatus according to claim 1, wherein said metal film has a thickness of 10 nm to 70 nm, and said transparent dielectric film has a thickness of 100 nm to 2000 nm.

6. A measuring apparatus according to claim 2, wherein said metal film has a thickness of 10 nm to 70 nm, and said transparent dielectric film has a thickness of 100 nm to 2000 nm.

7. A measuring apparatus according to claim 3, wherein

said metal film has a thickness of 10 nm to 70 nm, and said transparent dielectric film has a thickness of 100 nm to 2000 nm.

8. A measuring apparatus according to claim 4, wherein said metal film has a thickness of 10 nm to 70 nm, and said transparent dielectric film has a thickness of 100 nm to 2000 nm.

9. A measuring apparatus according to claim 1, wherein said transparent dielectric film is made of $SiO_2$, a glass, or plastic material.

10. A measuring apparatus according to claim 2, wherein said transparent dielectric film is made of $SiO_2$, a glass, or plastic material.

11. A measuring apparatus according to claim 3, wherein said transparent dielectric film is made of $SiO_2$, a glass, or plastic material.

12. A measuring apparatus according to claim 4, wherein said transparent dielectric film is made of $SiO_2$, a glass, or plastic material.

13. A measuring apparatus according to claim 5, wherein said transparent dielectric film is made of $SiO_2$, a glass, or plastic material.

14. A measuring apparatus according to claim 6, wherein said transparent dielectric film is made of $SiO_2$, a glass, or plastic material.

15. A measuring apparatus according to claim 7, wherein

said transparent dielectric film is made of $SiO_2$, a glass, or plastic material.

16. A measuring apparatus according to claim 8, wherein said transparent dielectric film is made of $SiO_2$, a glass, or plastic material.